



# SUBSTITUTE

## SEQUENCE LISTING

<110> Hyo Jeong Hong  
Chun Jeih Ryu  
Hangsook Hur

<120> HUMANIZED ANTIBODY SPECIFIC FOR SURFACE  
ANTIGEN PRE-S1 OF HBV AND PREPARATION METHOD THEREOF

<130> 118.13USWO

<140> 09/856,114

<141> 2001-05-18

<150> PCT/KR99/00699

<151> 1999-11-19

<150> 1998-49663

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<160> 38

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<220>

<223> Variable region of heavy chain in mouse KR127 antibody

<400> 19

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Ser	Val	Lys	Ile	Ser	Cys	Lys	Ala	Ser	Gly	Tyr	Ala	Phe	Ser	Ser	Ser	
			20					25					30			
Trp	Met	Asn	Trp	Val	Lys	Gln	Arg	Pro	Gly	Gln	Gly	Leu	Glu	Trp	Ile	
		35					40					45				
Gly	Arg	Ile	Tyr	Pro	Gly	Asp	Gly	Asp	Thr	Asn	Tyr	Asn	Gly	Lys	Phe	
	50					55					60					
Lys	Gly	Lys	Ala	Thr	Leu	Thr	Ala	Asp	Lys	Ser	Ser	Ser	Thr	Ala	Tyr	
65					70					75					80	
Met	Gln	Leu	Ser	Ser	Leu	Thr	Ser	Val	Asp	Ser	Ala	Val	Tyr	Phe	Cys	
				85					90					95		
Ala	Arg	Glu	Tyr	Asp	Glu	Ala	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	
			100					105					110			
Val	Ser	Ala														
			115													

<210> 20

<211> 115

<212> PRT

<213> Artificial Sequence

<220>

<223> Variable region of humanized heavy chain HKR127HC(HZI)

<400> 20

Gln	Val	Gln	Leu	Val	Gln	Ser	Gly	Ala	Glu	Val	Val	Lys	Pro	Gly	Ala	
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Ser	Val	Lys	Val	Ser	Cys	Lys	Ala	Ser	Gly	Tyr	Ala	Phe	Ser	Ser	Ser	
			20					25					30			
Trp	Met	Asn	Trp	Val	Arg	Gln	Ala	Pro	Gly	Gln	Gly	Leu	Glu	Trp	Ile	
		35					40					45				
Gly	Arg	Ile	Tyr	Pro	Gly	Asp	Gly	Asp	Thr	Asn	Tyr	Ala	Gln	Lys	Phe	
	50					55					60					
Gln	Gly	Lys	Ala	Thr	Leu	Thr	Ala	Asp	Lys	Ser	Thr	Ser	Thr	Ala	Tyr	
65					70					75					80	
Met	Glu	Leu	Ser	Ser	Leu	Arg	Ser	Glu	Asp	Thr	Ala	Val	Tyr	Phe	Cys	
				85					90					95		
Ala	Arg	Glu	Tyr	Asp	Glu	Ala	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	
			100					105					110			
Val	Ser	Ser														
			115													

<210> 21

<211> 115

<212> PRT

<213> Artificial Sequence

<220>

<223> Variable region of humanized heavy chain  
HKR127HC(HZIII)

<400> 21

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Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Ser
      20           25           30
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met
      35           40           45
Gly Arg Ile Tyr Pro Gly Asp Gly Asp Thr Asn Tyr Ala Gln Lys Phe
      50           55           60
Gln Gly Arg Val Thr Met Thr Ala Asp Lys Ser Thr Ser Thr Val Tyr
65           70           75           80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys
      85           90           95
Ala Arg Glu Tyr Asp Glu Ala Tyr Trp Gly Gln Gly Thr Leu Val Thr
      100           105           110
Val Ser Ser
      115
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<210> 22

<211> 113

<212> PRT

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<223> Variable region of light chain in mouse KR127  
antibody

<400> 22

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 1           5           10           15
Gln Pro Ala Ser Ile Ser Cys Lys Ser Ser Gln Ser Leu Leu Tyr Ser
      20           25           30
Asn Gly Lys Thr Tyr Leu Asn Trp Leu Leu Gln Arg Pro Gly Gln Ser
      35           40           45
Pro Lys Arg Leu Ile Tyr Leu Val Ser Lys Leu Asp Ser Gly Val Pro
      50           55           60
Asp Arg Phe Thr Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
65           70           75           80
Ile Arg Val Glu Ala Glu Asp Leu Gly Val Tyr Tyr Cys Val Gln Gly
      85           90           95
Thr His Phe Pro Gln Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys
      100           105           110
Arg
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<210> 23

<211> 113

<212> PRT  
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 <223> Variable region of humanized light chain

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 20 25 30  
 Asn Gly Lys Thr Tyr Leu Asn Trp Leu Leu Gln Lys Pro Gly Gln Ser  
 35 40 45  
 Pro Lys Arg Leu Ile Tyr Leu Val Ser Lys Leu Asp Ser Gly Val Pro  
 50 55 60  
 Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile  
 65 70 75 80  
 Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Val Gln Gly  
 85 90 95  
 Thr His Phe Pro Gln Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys  
 100 105 110  
 Arg

<210> 24  
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<400> 24  
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27

<210> 25  
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<400> 25  
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27

<210> 26  
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<220>  
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<400> 26  
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 <212> DNA  
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 <223> Synthetic oligonucleotide primer 27

<400> 27  
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<210> 28  
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<220>  
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<400> 28  
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 cctggacagg gtcttgagt gattggacgg atttatcctg gagatggaga tactaactac 180  
 aatgggaagt tcaagggcaa ggccacactg actgcagaca aatcctccag cacagcctac 240  
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<220>  
 <223> HZII

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 cctggacagg gtcttgagt gatgggacgg atttatcctg gagatggaga tactaactac 180  
 gcacagaagt tccagggcag agtcacaatg actgcagaca cgtccacgag cacagtctac 240  
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<220>  
 <223> HZI

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 cctggacagg gtcttgagt gattggacgg atttatcctg gagatggaga tactaactac 180  
 gcacagaagt tccagggcaa ggccacactg accgcagaca aatccacgag cacagcctac 240  
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Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Thr Ser Tyr			
20	25	30	
Trp Met Asn Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Met			
35	40	45	
Gly Arg Ile Tyr Pro Gly Asp Gly Asp Thr Asn Tyr Ala Gln Lys Phe			
50	55	60	
Gln Gly Arg Val Thr Met Thr Ala Asp Thr Ser Thr Ser Thr Val Tyr			
65	70	75	80
Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Tyr Cys			
85	90	95	
Ala Arg Glu Tyr Asp Glu Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr			
100	105	110	
Val Ser Ser			
115			

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ttattacaga ggccaggcca gtctccaaag cgcctaactc atctgggtgc taaactggac	180
tctggagtcc ctgacagggt cactggcagt ggatcaggaa cagattttac actgaaaatc	240
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tacctgcaga agccaggcca gcctccacag ctctgatct atgaagtttc caaccgggtc	180
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 20           25           30
Asn Gly Lys Thr Tyr Leu Asn Trp Leu Leu Gln Lys Pro Gly Gln Pro
 35           40           45
Pro Gln Leu Leu Ile Tyr Leu Val Ser Lys Arg Phe Ser Gly Val Pro
 50           55           60
Asp Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Lys Ile
 65           70           75           80
Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Val Gln Gly
 85           90           95
Thr His Phe Pro Gln Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
100           105           110
Arg

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<212> DNA
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<220>
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cctggacaag ggcttgagtg gatgggaata atcaacccta gtgggtgtag cacaagctac      180
gcacagaagt tccagggcag agtcaccatg accagggaca cgtccacgag cacagtctac      240
atggagctga gcagcctgag atctgaggac acggccgtgt attactgtgc gaga      294

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